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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/369,980	07/30/1999	DEANE E. GALLOWAY	24180-044002	7511

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EXAMINER

DYE, RENA

ART UNIT

PAPER NUMBER

3627

DATE MAILED: 04/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/369,980

Applicant(s)

GALLOWAY ET AL.

Examiner

Rena L. Dye

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17,18,20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17,18,20 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED OFFICE ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17,18,20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsome (4,457,960) in view of Lai et al. (5,272,36) and further in view of Wilhoit (5,283,128).

Newsome teaches linear low density polyethylene (LLDPE) used in multiple layer molecularly oriented films (Abstract). The film includes a first barrier layer having two opposing surfaces wherein first and/or second pairs of layers are adhered. In preferred structures the first pair of layers comprises 70% to 100% EVA and the second pair of layers comprises 10% to 90% LLDPE. In an embodiment involving a partial reversal of roles, the first pair of layers comprises 50% to 100% LLDPE. The second and third layers, or barrier layer, may comprise an ethylene vinyl acetate (EVA), and the fourth layer comprises 10% to 100% LLDPE (column 2, line 40 to column 3, line 24). Newsome uses conventional LLDPE, wherein one commercially available material is DOWLEX (column 5, lines 45+). The barrier layer may be ethylene vinyl alcohol copolymer (column 3, lines 25-28). A substantial end use of the film is in heat sealable shrink bags for utilization particularly in packaging (column 3, lines 32-37). The thickness of each layer of the film is essentially the same as the same layer in conventional

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shrink films. By way of example in a typical film used to make the bag of Figures 1 and 2, the overall film thickness is 2.25 mils. Layers 14 and 18 are 0.4 mil, and layer 16 is 1.45 mils (column 4, lines 60-65).

Newsome does not teach using metallocene catalyzed polyethylenes, or polymers or copolymers formed by a polymerization reaction with a single site catalyst wherein the ethylene alpha olefin copolymer having a molecular weight distribution of less than 2.5 and I_{10}/I_2 ratio of about 7 to about 12.

Lai et al. teaches a substantially linear polyethylene that has superior properties to conventional polyethylenes, wherein comparisons are made between their invention and DOWLEX 2054, a conventional LLDPE (see Examples 7-9). They also teach that the polymers of their invention are superior to conventional polyethylene polymers in terms of gloss, haze, dart impact, and clarity (see Examples 10-13).

Lai et al. further teaches a molecular weight distribution of less than 2.5 (column 22, lines 55-65). Example 6 of Table II (column 18, lines 48-66; column 19) discloses comparative data, which includes examples 5-6 having a I_{10}/I_2 values of 9.45 and 7.61, respectively, and a molecular weight distribution of 1.97 and 2.09, respectively. Comparative Examples 7 refers to that of Dowlex 2045 (that of the Newsome reference) that has a molecular weight distribution of 3.5-3.8. Therefore, the Lai reference clearly teaches an improvement over the Dowlex 2045 resin.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the substantially linear olefin polymers of the type taught by Lai et al. in place of the DOWLEX used in the films taught by Newsome, in order to have

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produced a film having higher gloss, lower haze, and better clarity. Further, the recited ethylene alpha olefin copolymer having a molecular weight distribution of less than 2.5 and I_{10}/I_2 ratio of about 7 to about 12 would be well within the skill of the ordinary artisan based upon the intended use of the packaging material. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.

In re Aller, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955).

The combination of reference fails to specifically teach irradiation of the film.

Wilhoit teaches a heat shrinkable multilayer food packaging film including similar layers to that of Newsome EVOH, EVA and ethylene alpha-olefin copolymers. Wilhoit further teaches that it is desirable to cross-link one or more layers if the film is the multilayer type, to provide improved abuse and/or puncture resistance. This may be accomplished by irradiation (column 11, line 61 to column 12, line 34).

Since Wilhoit teaches cross-linking by irradiation of a similar film material to that of Newsome for use in food packaging, it would have been obvious to one having ordinary skill in the art to have irradiated the film of Newsome to have provided additional abuse and puncture resistance.

Although the combination of references does not specifically teach the claimed thicknesses, it would have been obvious to one having ordinary skill in the art to have varied the thickness of the layers based upon the desired degree of strength and flexibility. Since the Newsome reference teaches film layer thicknesses which are reasonably close to that which is claimed, varying the thickness of the film layers is deemed to be routine optimization and would have been obvious to one having ordinary skill in the art based upon the desired properties.

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3. Claims 17,18,20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsome (4,457,960) in view of Schut "Enter a New Generation of Polyolefins" Nov. 1991, Plastics Technology, or Van der Sanden "A New Family of Linear Ethylene Polymers With Enhanced Sealing Performance" February 1992, and further in view of Wilhoit (5,283,128).

Newsome has been previously discussed. Newsome does not teach using metallocene-catalyzed polyethylenes, or polymers or copolymers formed by a polymerization reaction with a single site catalyst.

Schut, an Exxon trade journal, teaches a new line of linear low density polyolefins made using homogenous single site metallocene catalysts, wherein the polyolefins have a density of at least 0.90 g/cc. Furthermore, Schut teaches that EXXPOL EXACT-101 has a total impact strength of 107 in.-lb. These polyolefins have physical characteristics far superior to traditional polyolefins produced from conventional Ziegler/Natta catalysis. For example: metallocene catalyzed polyolefins have lower heat-seal initiation temperatures, higher strength (Dart impact results), and better clarity. The superior attributes of these metallocene catalyzed polyolefins are further elaborated in Van der Sanden et al. (Pages 99-100); and they further teach that these polyolefins are a choice material in the production of heat sealable films. Finally it should be noted that metallocene catalyzed polyolefins (1-butene, 1-hexene, or 1-octene/ethylene copolymers) are commercially available from Dow in the form of "Affinity" or from Exxon in the form of "Exact". As discussed above Van der Sanden et al. and Schut teach that commercially available metallocene catalyzed LLDPE have physical properties far superior to that of analogous LLDPE formed by Ziegler-Natta catalysis.

Schut "Enter a New Generation of Polyolefins" Nov. 1991, Plastics Technology, or Van der Sanden "A New Family of Linear Ethylene Polymers With Enhanced Sealing Performance" do not specifically teach the recited molecular weight distribution and I_{10}/I_2 ratio. It would have been obvious or well within the level of one having ordinary skill in the art to have provided the

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molecular weight distribution and I_{10}/I_2 ratio within the claimed ranges since the references specifically teach a metallocene catalyzed LLDPE, which appears to be similar to that disclosed by Applicant.

It would have been obvious to one having ordinary skill in the art at the time of the invention to have used the commercially available metallocene catalyzed LLDPE of the type taught by Schut or Van der Sanden et al. in the laminate structure of Newsome to have produced a film with superior strength and performance.

The combination of references fails to specifically teach irradiation of the film. Wilhoit has been previously discussed.

Since Wilhoit teaches cross-linking by irradiation of a similar film material to that of Newsome for use in food packaging, it would have been obvious to one having ordinary skill in the art to have irradiated the film of Newsome to have provided additional abuse and puncture resistance.

Although the combination of references does not specifically teach the claimed thicknesses, it would have been obvious to one having ordinary skill in the art to have varied the thickness of the layers based upon the desired degree of strength and flexibility. Since the Newsome reference teaches film layer thicknesses which are reasonably close to that which is claimed, varying the thickness of the film layers is deemed to be routine optimization and would have been obvious to one having ordinary skill in the art based upon the desired properties.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

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Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 17,18,20 and 21 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,2,4-13,15,16 and 21 of copending Application No. 08/899,410. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims recited in the present patent application are recited broadly enough to include or encompass that which is recited in related patent application serial number 08/899,410.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

6. Applicant's arguments have been previously addressed in the Final Office Action mailed on March 31, 2003. For reasons of record, the rejections have been maintained.

In Applicant's response at page 2 first full paragraph, Applicant argues that the linear low density polyethylene taught by Newsome is chemically and physically distinct from the linear

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low density polyethylene taught in Applicants' claims, the linear low density polyethylenes described and taught in Newsome are produced by a process which gives polyethylenes which are vastly different from the polyethylenes produced by the single site catalyst technology described in Lai. The Examiner agrees that the polyethylenes are different, however; Lai clearly teaches an improvement over DOWLEX 2054 (disclosed by Newsome), in particular with respect to its use in making films, and clearly teaches superior properties, e.g. higher gloss, lower haze, and better clarity, over that which is known as DOWLEX. Therefore, it continues to be the Examiner's position that it would have been obvious to one having ordinary skill in the art to have used the single site catalyst polyethylene in place of the polyethylene taught by Newsome.

Applicant's arguments found at page 3, line 14 through page 4, line 9, regarding the design of a viable film structure involving the consideration of many factors such as single site catalysts having lower melting points and are stronger and tougher than comparable polymers made with ZN catalysts, however, the homogeneous nature and the narrow molecular weight distribution of the SSC materials makes them more difficult to process by melt extrusion during multilayer film manufacturing and film orientation by the double bubble process, is not convincing. Applicant's arguments appear to be directed to merely opinion that is not supported by any factual evidence.

With respect to the Willhoit reference, Applicant argues that Willhoit does not teach the described blend. Willhoit was applied for its teaching that it is well known in the art to irradiate films to provide improved abuse and/or puncture resistance. Although Willhoit does not teach the identical blend film layer, Willhoit does teach a similar blend used to make a heat shrinkable multilayer food packaging film including similar layers to that of Newsome. Therefore, the

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Examiner maintains the position that it would have been obvious to one having ordinary skill in the art to have irradiated the presently claimed film structure to have provided improved abuse and/or puncture resistance.

The rejections of claims 17,18,20 and 21 under 35 USC 103(a) as being unpatentable over Newsome (4,457,960) in view of Schut "Enter a New Generation of Polyolefins", Plastics Technology, or Van der Sanden "A New Family of Linear Ethylene Polymers With Enhanced Sealing Performance" has been maintained for reasons of record. It is the Examiner's position that it would have been obvious or well within the level of one having ordinary skill in the art to have provided the molecular weight distribution and I_{10}/I_2 ratio within the claimed ranges since the references specifically teach a metallocene catalyzed LLDPE, which appears to be similar to that disclosed by Applicant.

Applicant's comment that Applicants would be willing to consider submitting a terminal disclaimer to overcome the obviousness-type double patenting rejection of record upon receiving an indication of allowable subject matter is acknowledged.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rena L. Dye whose telephone number is 703-308-4331. The examiner can normally be reached on Monday-Thursday 8:30 AM - 7:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Olszewski can be reached on 703-308-5183. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

A handwritten signature in black ink, appearing to read 'Rena L. Dye', with a stylized flourish at the end.

Rena L. Dye
Primary Examiner
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R. Dye
April 16, 2003